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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/689,753

10/20/2003

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EXAMINER
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LEUNG, JENNIFER

ART UNIT	PAPER NUMBER
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3714

MAIL DATE	DELIVERY MODE
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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	Application No. 10/689,753	Applicant(s) BARR, KEITH E.	
	Examiner Jennifer Leung	Art Unit 3714	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-37 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-37 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 3/8/2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. ____                                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>11/24/2003</u> .  | 6) <input type="checkbox"/> Other: ____                           |

## DETAILED ACTION

### *Specification*

1. The abstract of the disclosure is objected to because of undue length. The abstract exceeds the range of 50 to 150 words. Correction is required. See MPEP § 608.01(b).

### *Claim Objections*

2. Claim 37 is objected to because of the following informalities:

Claim 37, line 2: "the audible rate" should be -- an audible rate --.

Appropriate correction is required.

### *Claim Rejections - 35 USC § 103*

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. **Claims 1, 9-10, 12-13, 27-32, and 34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Horchler (US 3,782,730) in view of Dacus (US 5,970,105).**

Re claims 1 and 34. Horchler discloses a system for locating a golf ball, the system comprising: the golf ball having an encapsulated transmitter that modulates an audible

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signal to an output band, wherein the output band defines an output bandwidth (Fig. 2; col. 1, lines 45-50).

However, Horchler fails to disclose a receiver having an input band defining an input bandwidth wherein a center frequency of the input band of the receiver is variable; wherein the input bandwidth is smaller than the output bandwidth. Dacus discloses such (col. 3, lines 59-67; col. 4, lines 1-15) (col. 10, lines 53-67; col. 11, lines 1-16).

Therefore, in view of Dacus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include the aforementioned limitations in order to reduce interference of the transmitter's signal (col. 1, lines 40-47 of Dacus).

Re claim 9. Horchler, as modified by Dacus, teaches wherein the transmitter includes a free running oscillator (col. 1, lines 21-25 of Dacus).

Re claim 10. Horchler, as modified by Dacus, teaches wherein the free running oscillator includes an LC tank circuit having an inductor and a capacitor (col. 1, lines 21-25 of Dacus; Fig. 2 of Horchler).

Re claim 12. Horchler discloses wherein the transmitter further includes a variable capacitance (Fig. 3).

Re claim 13. Horchler discloses wherein the variable capacitance is provided by a bank of switched capacitors (Fig. 3).

Re claim 27: Horchler, as modified by Dacus, teaches wherein the receiver includes a detector (col. 2, lines 50-55 of Dacus).

Re claim 28: Horchler, as modified by Dacus, teaches wherein the detector comprises an AM detector (col. 2, lines 50-55 of Dacus).

Re claim 29. Horchler, as modified by Dacus, teaches wherein the receiver includes an extendable antenna (Fig. 1 of Dacus).

Re claim 30. Horchler discloses a golf ball comprising: an encapsulated transmitter that modulates an audible signal to an output band; wherein the output band defines an output bandwidth (Fig. 2; col. 1, lines 45-50).

However, Horchler fails to disclose a free running oscillator having an inductor and a capacitor. Dacus discloses such (col. 1, lines 21-25).

Therefore, in view of Dacus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include the aforementioned limitations in order to provide amplitude modulation (AM) (col. 1, lines 21-25).

Re claim 31 and 32: See rejections of claims 12 and 13 for features of claims 31 and 32.

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**5. Claims 2-5, 14, and 33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Horchler/Dacus, and further in view of Bogert (US 2004/0161362).**

Re claims 2, 14, and 33. Horchler/Dacus discloses the above except for wherein the audible signal comprises a saw-tooth wave and wherein the bank of switched capacitors is controlled by an output of a counter. However, Bogert discloses such (para. 0127; in the current application para. 0072 of the specification states that a saw-tooth wave is formed by having a counter.).

Therefore, in view of Bogert, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include the aforementioned limitations in order to provide a sound wave for the transmitter to modulate.

Re claims 3-5. Horchler/Dacus discloses the above except for wherein the audible signal has a period defining a frequency between about 20 Hz and about 20 kHz, between about 60 Hz and about 2 kHz, or between about 2 kHz and about 6 kHz. However, Bogert discloses such (paras. 0027 and 0126).

Therefore, in view of Bogert, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include the aforementioned limitations in order to transmit signals that humans can hear (audible range, low range, and high range, respectively) so that the ball can be located.

**6. Claims 6-8, and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Horchler/Dacus, and further in view of Pirritano (US 6,620,057).**

Re claims 6-7. Horchler/Dacus discloses the above except for wherein the audible signal comprises a sequence of audible tones and pauses between the tones. However, Pirritano discloses such (col. 2, lines 14-34).

Therefore, in view of Pirritano, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include the aforementioned limitations in order to transmit identifiable signals that enable a golfer to locate the ball.

Re claim 8. Horchler/Dacus discloses the above except for wherein the transmitter further includes a battery and the audible signal indicates a condition of the battery. However, Pirritano discloses such (col. 2, lines 14-34: the battery beeps as long as it has power and stops when it runs out).

Therefore, in view of Pirritano, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include the aforementioned limitations in order to alert the golfer as to the status of the battery.

Re claim 11. Horchler/Dacus discloses the above except for wherein the inductor comprises an antenna. However, Pirritano discloses such (col. 5, lines 40-50; col. 6, lines 15-20).

Therefore, in view of Pirritano, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include the aforementioned limitation in order to transmit the signal so that the receiver can pick up the signal.

**7. Claims 15, 19, and 35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Horschler/Dacus, and further in view of Maedjaja (US 5,481,545).**

Re claims 15, 19, and 35. Horschler/Dacus discloses the above except for wherein the center frequency of the input band cycles across a range of the output band at a sub-audible rate; wherein the input band cycles across only a sub-portion of the output band thereby defining a guard band at each end of the output band. Maedjaja discloses such (col. 6, lines 31-61)

Therefore, in view of Maedjaja, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include the aforementioned limitations in order to prevent the receiver from picking unwanted signals (col. 1, lines 57-60 of Maedjaja).

**8. Claims 16-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Horschler/Dacus/Maedjaja, and further in view of Wijnen (US 6,904,153).**

Re claims 16-17: Horschler/Dacus/Maedjaja discloses the above except for wherein the sub-audible rate is between about 0 Hz and about 10 Hz; wherein the sub-audible rate is between about 1 Hz and about 2 Hz. Wijnen discloses such (col. 3, lines 6-15).



Therefore, in view of Wignen, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include the aforementioned limitations in order to provide a sub-audible rate within a preferable range.

**9. Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Horchler/Dacus/Maedjaja, and further in view of Lozier (US 2,556,699).**

Re claim 18. Horchler/Dacus/Maedjaja discloses the above except for wherein the input band cycles across the output band following a saw-tooth wave having a period defined by the sub-audible rate. Lozier discloses such (col. 3, lines 30-65; col. 4, lines 65-70).

Therefore, in view of Lozier, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include the aforementioned limitations in order to amplify the transmitted signal without increased signal distortion (col. 1, lines 23-27 of Lozier).

**10. Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Horchler/Dacus/Maedjaja, and further in view of Bongiorno (US 4,991,226).**

Re claim 20. Horchler/Dacus/Maedjaja discloses the above except for wherein the guard band is at least as wide as the input bandwidth. Bongiorno discloses such (abstract; col. 8, lines 5-15).

Therefore, in view of Bongiorno, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include the aforementioned limitation in order to avoid interference from nearby signals (col. 8, lines 5-15).

**11. Claims 21-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Horschler/Dacus, and further in view of Brunius (US 4,614,945).**

Re claims 21-26. Horschler/Dacus discloses the above except for wherein an output bandwidth of the output band is between about 4 MHz and about 5 MHz and the input bandwidth is between about 0.1 MHz and about 0.3 MHz; wherein the input bandwidth represents less than 50 % of an output bandwidth of the output band; wherein the input bandwidth represents between about 5% and about 50% of an output bandwidth of the output band; wherein the input bandwidth represents between about 2% and about 8% of an output bandwidth of the output band. Brunius discloses such (col. 28, lines 60-65; col. 31, line 68; col. 32, lines 1-2).

Therefore, in view of Brunius, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include the aforementioned limitations in order to better detect signals transmitted by the transmitter and avoid detecting other unwanted signals within range.

**12. Claim 36 is rejected under 35 U.S.C. 103(a) as being unpatentable over Horschler/Dacus, and further in view of Koike (US 5,521,605).**

Re claim 36. Horschler/Dacus discloses the above except for extending an antenna on the receiver to increase an input signal gain; moving the receiver closer to the transmitter; and retracting the antenna to decrease the input signal gain. Koike discloses such (col. 5, lines 12-17).

Therefore, in view of Koike, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include the aforementioned limitations in order to have a stronger signal so that it is easier for a golfer to locate the ball.

**13. Claim 37 is rejected under 35 U.S.C. 103(a) as being unpatentable over Horschler/Dacus, and further in view of Thiede (US 7,194,093).**

Re claim 37. Horschler/Dacus discloses the above except for wherein the act of modulating the audible signal comprises cycling a center frequency of the transmitted signal across the output band at the audible rate. Thiede discloses such (col. 3, lines 1-55).

Therefore, in view of Thiede, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include the aforementioned limitation in order to modulate an audible signal with a variable center frequency.

### ***Conclusion***

14. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Englmeier discloses an apparatus with a signal receiving unit for locating golf balls. Cho discloses a golf ball having rf transmitter and receiver thereof.


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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jennifer Leung whose telephone number is 571-270-1342. The examiner can normally be reached on Mon -Thur, every other Fri.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert E. Pezzuto can be reached on 571-272-6996. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

  
Jennifer Leung  
June 2, 2007

  
Robert E. Pezzuto  
Supervisory Patent Examiner  
Art Unit 3714